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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,547	04/14/2004	Joe E. Stout	10012068-4	9111

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,547

Applicant(s)

STOUT ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/14/04 & 7/13/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 22-39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 12, 14 and 19 of U.S.

Patent No. 6,739,519 in view of Swanson et al. (U.S. 6,409,312).

Claims 1, 12, 14 and 19 of U.S. Patent No. 6,739,519 recites all the claimed limitations of the claimed invention except for explicitly defining the fluid ejector being a heating element or resistor. Swanson et al. discloses an thermal ink jet print head assembly typically including a resistor wherein, to print a single dot of ink, the resistor is heated then in turn superheats a thin layer of ink within a firing chamber causing explosive vaporization of ink and causing a droplet of ink to be ejected through an associated orifice onto a recording paper. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the thin film resistor as the fluid ejector as claimed in the U.S. Patent No. 6,739,519 since

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Swanson et al. teaches this to be known in the art to use a resistor as a heating element for heating the ink to cause the ink ejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 31, 38 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Keefe et al. (U.S. 5,635,966).

Keefe et al. discloses an edge feed ink delivery thermal ink jet print head structure and method of fabrication comprising forming a heating element (film resistor 70, Fig. 8) formed on a substrate surface (substrate 28), defining a firing chamber (evaporization chamber 72) formed about the heating element with a first layer (barrier

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layer 30) on the substrate surface, defining a nozzle (17) over the firing chamber in a second layer (layer 18), and exposing the substrate surface by offsetting at least one outer edge of the first layer from a respective outer edge of the substrate (Figs. 8 and 12), the nozzle having a countersunk bore.

5. Claims 22-24, 27-30 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Mrvos et al. (U.S. 6,409,312).

Mrvos et al. discloses an ink jet printer and a process of fabricating the ink jet print head, the ink jet print head including a heating element (heater resistor 22) on a substrate surface (14), and a cover layer (layers 44 and 52) on the substrate surface, the cover layer defining a firing chamber (ink chamber 46) formed about the heating element and defining a nozzle (50) over the firing chamber (see Fig. 3), wherein the cover layer includes a first layer (layer 44) and a second layer (52), wherein at least one of the first and second layers includes a dry film (col. 5, lines 53-65).

Referring to claims 23-24, 27-30, Mrvos et al. further teaches :

- the first layer (44) at least partially defines the firing chamber (46) (Fig. 3),
- the second layer (52) at least partially defines the nozzle (50) (Fig. 3),
- the cover layer includes at least two SU8 layers (first and second photo-imaged polymer layers 44 and 52) (col. 5, line 66 to col. 6, line 18).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 32-33, 39, 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keefe et al. in view of Mrvos et al.

Keefe et al. discloses all the basic limitations of the claimed invention except for the first and second layers being SU8 and the claimed lost wax method.

Mrvos et al. discloses an ink jet printer and a process of fabricating the ink jet print head, wherein the first and second layers (44 and 52), which define the firing chamber (46) and the nozzle (50), respectively, are photo-imaged polymer or SU8 layers and the forming of the layers using a lost wax method (using replaceable/removable material at 66 and 76 for shaping the outer structure of the ink jet print head) (col. 10, line 66 to col. 11, line 4).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the barrier layers with photo-imaged polymer SU8 for structuring the ink jet print head in the device of Keefe et al. as taught by Mrvos et al. The motivation for doing so would have been to provide a malleable material and a simple method for processing the ink jet print head with accurate alignment between the resistor and the associated nozzle as suggested by Mrvos et al. at col. 5, lines 45-51.

8. Claims 25-26 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mrvos et al. in view of Swanson et al.

Mrvos et al. discloses all the basic limitations of the claimed invention except for the third layer between the first and second layers, wherein the third layer at least partially defines the firing chamber.

Swanson et al. discloses a thermal ink jet print head including a cover layer (18A) formed about the film resistor (172) and having three laminated layers wherein the middle layer is formed of PET material, which allows punching and handling the film without stretching (col. 6, lines 45-65).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a third layer to the barrier layers of Mrvos et al. as taught by Swanson et al. The motivation for doing so would have been to provide the layers with a certain rigidity to sustain high temperature.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D Meier can be reached on (571) 272-2149. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

August 16, 2004